

**AFRL-RI-RS-TN-2008-1**  
**Final Technical Note**  
**February 2008**



## **GLASS BOX**

**Battelle Memorial Institute**

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<b>14. ABSTRACT</b> The goals of this effort were to develop Glass Box capabilities to allow for the capturing of analyst activities and the associated data resources, track and log the results of automated processing to provide threads for analyzing decisions made, and infer higher level cognitive processes from this. Due to funding cuts to the sponsoring organization, this contract was terminated at a very early stage and these planned developments were not performed. This technical note represents the sum of the work that was performed.					
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## **1. Technical Activities**

The technical focus was very limited during this contract, but a few significant activities did occur:

- Rik Littlefield presented the paper “Glass Box: Capturing, Archiving, and Retrieving Workstation Activities” (PNWD-SA-7482, PJ Cowley, JN Haack, RJ Littlefield and E Hampson), at the 3<sup>rd</sup> ACM Workshop on Capture, Archival and Retrieval of Personal Experiences (CARPE 2006) on October 27, 2006 in Santa Barbara, CA.
- Laura Curtis made contact with NRO and supported their Future’s Lab project. This included a demo of the software at the NIST facility, review of their project plan, providing 90 licenses, which required a financial investment since this was more Camtasia licenses than what was currently available, and email and phone support. This exercise was the largest exercise to date using the Glass Box and the first exercise in a completely classified environment. The exercise was successful with the following comments:
  - Would like the Glass Box to be able to identify web-based applications as something beside the browser.
  - Would like the data from Enterprise level applications to be captured.
- Jerome Haack worked on enhancing the features and reliability of the secure HTTP recording capability of the Glass Box proxy. This was a highly requested additional feature and has already received feedback from the beta version releases in September.

## **2. R&D Consequences on Contract Cancellation**

The contract cancellation was unfortunate and affected the Glass Box team in a number of ways.

### **2.1. Development efforts**

There was a number of highly requested development activities requested by our CASE partners that we were not able to complete including:

- Multiple user review panel
- Upgrading JBoss and Camtasia libraries
- Including support of SQL Server 2005
- Improved support of XML

### **2.2. Operations efforts**

There were a number of operations efforts planned throughout the contract that will no longer be provided, including:

- Support of the RDEC experiments
- Support and availability of the common Analytic Event Server.
- Data releases of experiment data to the CASE partners.

### **2.3. CASE integration**

The CASE integration being led by Oculus will no longer be supported. Initial teleconference meetings were held with Oculus to plan the Glass Box integration, but all development to integrate has been stopped.

### **2.4. NRO support**

The NRO Futures Lab was a great opportunity for the Glass Box to show its potential to operate in a classified environment and to test the scalability of the Glass Box. While the experiment did happen, all initial contact and most technical support was done on an unfunded and limited basis as funding was not available for this task. Also, licenses were provided with contract funds for this exercise with the understanding that additional funds would be reimbursed by AFRL. Since this money was never received, this impacted our end of the year spending, making some staff work without funding.

### **2.5. Other CASE project support**

The RAPID project was planning on adding their produced events to the Glass Box event stream. There was also interest from other CASE partners to be discussed further at the Integration meeting that took place in November. Since the Glass Box was no longer going to be funded during the integration, we did not attend.

### **2.6. Limited testing budget**

Our final delivery was not as thoroughly tested as previous releases. Since we did not receive our anticipated replacement funds for the NRO licenses, we did not have the usual end-of-release testing budget.

## **3. Final Deliverables**

Final deliverables will include:

- This report
- Final Glass Box Version 4.6 Software release, with modifications made to no longer require a license key and to no longer include Camtasia libraries.
- Source code for final Glass Box Version 4.6 release, including database scripts.

## **4. Other**

We were contacted by the technical lead of a DTO project called the Crystal Box, which was reported to be inspired by the Glass Box. The Crystal Box is a method to validate dynamic decision networks leveraged by agent-based simulations to assist decision making in combat.